FIGURE 1

VAP-1 amino acid sequence (SEQ ID NO:1)

MAVLAVVLLLACLERAVAQTFGCSNTKINDQARKMFYDAHNDARRSMAKGLE
PNKCGLLSGGKNVYELNWDCEMEAKAQEWADGCPSSFQTFDPTWGQNYATYM
GSIADPLPYASMAVNGWWSEIRTVGLTDPDNKYTNSAMFRFANMANGKASAFG
CAYALCAGKLSINCIYNKIGYMTNAIIYEKGDACTSDAECTTYSDSQCKNGLCYK
APQAPVVETFTMCPSVTDQSDQARQNFLDTHNKLRTSLAKGLEADGIAAGAFAP
MAKQMPKLVKYSCTVEANARTWAKGCLYQHSTSAQRPGLGENLYMISINNMP
KIQTAEDSSKAWWSELKDFGVGSDNILTQAVFDRGVGHYTQMAWEGTTEIGCF
VENCPTFTYSVCQYGPAGNYMNQLIYTKGSPCTADADCPGTQTCSVAEALCVIP

vap-1 cDNA nucleotide sequence (SEQ ID NO:2)

ATGGCGGTATTAGCAGTGGTACTACTTCTAGCATGCCTGGAGAGAGCGGTTG
CACAGACGTTCGGCTGCTCTAACACCAAGATCAATGACCAGGCTCGTAAGAT
GTTCTATGATGCTCACAATGATGCAAGACGAAGCATGGCTAAAGGGCTTGAG
CCAAACAAGTGCGGACTCTTATCTGGTGGAAAGAATGTTTATGAATTGAATT
GGGATTGCGAGATGGAAGCAAAAGCTCAGGAATGGGCAGACGGATGTCCCA
GCTCTTTCCAGACATTTGATCCAACATGGGGGCAGAACTACGCGACGTACAT
GGGATCGATTGCTGATCCGCTTCCATACGCTTCCATGGCTGTTAATGGGTGGT
GGTCGGAAATTAGAACCGTAGGACTTACGGATCCTGATAACAAGTACACTAA
CAGTGCAATGTTCCGATTTGCTAATATGGCAAATGGTAAAGCTTCAGCTTTTG
GATGTGCATACGCGTTGTGCGCAGGAAAACTATCCATCAATTGCATTTACAA
CAAGATAGGATACATGACCAATGCTATCATTTATGAAAAAGGAGATGCCTGT
ACCAGTGACGCTGAATGCACCACCTACTCAGACTCACAATGCAAAAACGGTC
TTTGCTATAAGGCACCTCAAGCTCCAGTCGTTGAGACTTTCACAATGTGCCCT
TCGGTCACGGACCAGTCGGATCAGGCGCGTCAAAACTTCTTGGACACCCATA
ACAAATTGCGTACAAGCCTTGCCAAGGGACTTGAAGCTGATGGAATTGCCGC
TGGAGCATTTGCACCAATGGCCAAGCAAATGCCAAAACTGGTAAAATACAGC
TGCACAGTTGAAGCAAACGCCAGAACATGGGCAAAAGGATGCCTTTACCAGC
ATTCAACAAGCGCACAGAGACCAGGACTCGGTGAAAATCTTTATATGATCAG
CATTAACAACATGCCTAAAATTCAAACCGCGGAGGACTCCTCAAAGGCTTGG
TGGTCCGAGTTGAAAGACTTCGGAGTCGGTTCTGACAACATTCTGACCCAAG
CAGTTTTTGATCGTGGCGTTGGACATTACACACAAATGGCATGGGAAGGAAC
TACTGAAATTGGATGTTTTGTGGAGAATTGTCCAACATTCACTTATTCCGTAT
GCCAATATGGTCCAGCGGGAAACTACATGAACCAACTAATCTATACCAAGGG
CTCACCATGCACAGCTGACGCCGATTGCCCAGGAACCCAGACATGCAGTGTC
GCTGAAGCATTATGTGTTATCCCTTAGTAAATTTTCTATGCAACTCTTTGAAA
GTCATAATAAATATGCAAAAATTAAAAAAAAAAAAAA

FIGURE 1, cont.

VAP-2 amino acid sequence (SEQ ID NO:3)

MNVVLSAVTLFLIFRYAQTVNIEGSGGNDELLEQNVWNDVDDKVVEALGGLDD
ELLTEHVCNKSTITQLQQEIILTTHNELRRSLAFGKQRNKRGLMNGARNMYKLD
WDCELASLAANWSTSCPQHFMPQSVLGSNAQLFKRFYFYFDGHDSTVHMRNA
MKYWWQQGEEKGNEDQKNRFYARRNYFGWANMAKGKTYRVGCSYIMCGDG
ESALFTCLYNEKAQCEKEMIYENGKPCCEDKDCFTYPGSKCLVPEGLCQAPSMV
KDDGGSFQCDNSLVSDVTRNFTLEQHNFYRSRLAKGFEWNGETNTSQPKASQM
IKMEYDCMLERFAQNWANNCVFAHSAHYERPNQGQNLYMSSFSNPDPRSLIHT
AVEKWWQELEEFGTPIDNVLTPELWDLKGKAIGHYTQMAWDRTYRLGCGIANC
PKMSYVVCHYGPAGNRKNNKIYEIGDPCEVDDDCPIGTDCEKTTSLCVISK

vap-2 cDNA nucleotide sequence (SEQ ID NO:4)

ATGAACGTGGTCCTTTCCGCTGTCACTCTTTTTCTTATTTTTCGATATGCGCAG
ACTGTGAATATAGAAGGCAGTGGAGGAAATGATGAGCTTCTTGAGCAGAACG
TGTGGAACGATGTAGACGACAAGGTTGTAGAAGCACTTGGTGGTCTTGATGA
TGAACTGCTAACCGAACATGTGTGTAACAAATCAACGATCACTCAGCTACAG
CAGGAGATCATCTTGACAACCCACAATGAATTACGAAGATCATTGGCTTTCG
GAAAGCAAAGAAACAAGAGAGGTCTCATGAACGGTGCGAGAAATATGTATA
AACTGGATTGGGATTGTGAACTGGCATCACTTGCAGCCAATTGGTCAACCTCC
TGCCCTCAGCACTTTATGCCGCAATCGGTACTTGGCTCCAACGCTCAGCTTTT
TAAGCGTTTCTATTTTTATTTTGATGGGCACGACTCTACTGTACATATGCGAA
ACGCGATGAAGTATTGGTGGCAGCAAGGTGAAGAAAAAGGCAATGAGGATC
AGAAAAATAGATTCTATGCCAGACGAAATTATTTTGGATGGGCAAACATGGC
AAAAGGAAAAACATATCGAGTTGGATGCTCGTATATTATGTGCGGCGACGGT
GAATCTGCACTTTTCACTTGTCTTTATAACGAAAAAGCCCAATGCGAAAAAG
AAATGATTTACGAAAATGGAAAACCCTGCTGTGAGGATAAAGACTGTTTCAC
ATATCCAGGATCAAAATGTTTAGTACCTGAAGGATTATGTCAAGCACCTTCTA
TGGTAAAGGATGATGGAGGAAGTTTCCAATGTGATAACTCCCTTGTGTCAGA
TGTCACCCGCAATTTCACTTTGGAGCAACACAATTTTTATAGATCTCGTCTTG
CAAAAGGTTTTGAATGGAATGGAGAAACAAACACTTCCCAGCCAAAGGCTAG
TCAAATGATCAAAATGGAGTATGACTGCATGTTGGAACGGTTTGCACAAAAC
TGGGCAAATAATTGCGTTTTTGCACACTCGGCACATTACGAAAGACCGAATC
AGGGTCAGAATCTCTACATGAGTTCTTTCTCAAACCCTGATCCTAGAAGCCTT
ATACATACGGCCGTCGAGAAGTGGTGGCAGGAATTGGAGGAGTTCGGTACTC
CAATTGATAACGTTCTGACACCCGAATTGTGGGATTTGAAAGGGAAAGCGAT
AGGACATTACACTCAGATGGCCTGGGATCGTACTTACCGTCTTGGTTGTGGAA
TCGCAAACTGTCCGAAGATGTCGTACGTGGTTTGTCACTATGGGCCAGCAGG
CAACAGAAAGAACAATAAAATCTATGAAATCGGGGATCCTTGCGAAGTCGAT
GATGATTGCCCGATTGGAACAGATTGTGAAAAGACAACTTCTTTATGTGTGAT
CTCAAAATAA

FIGURE 2: Schematic diagram of nematode venom allergen protein domains

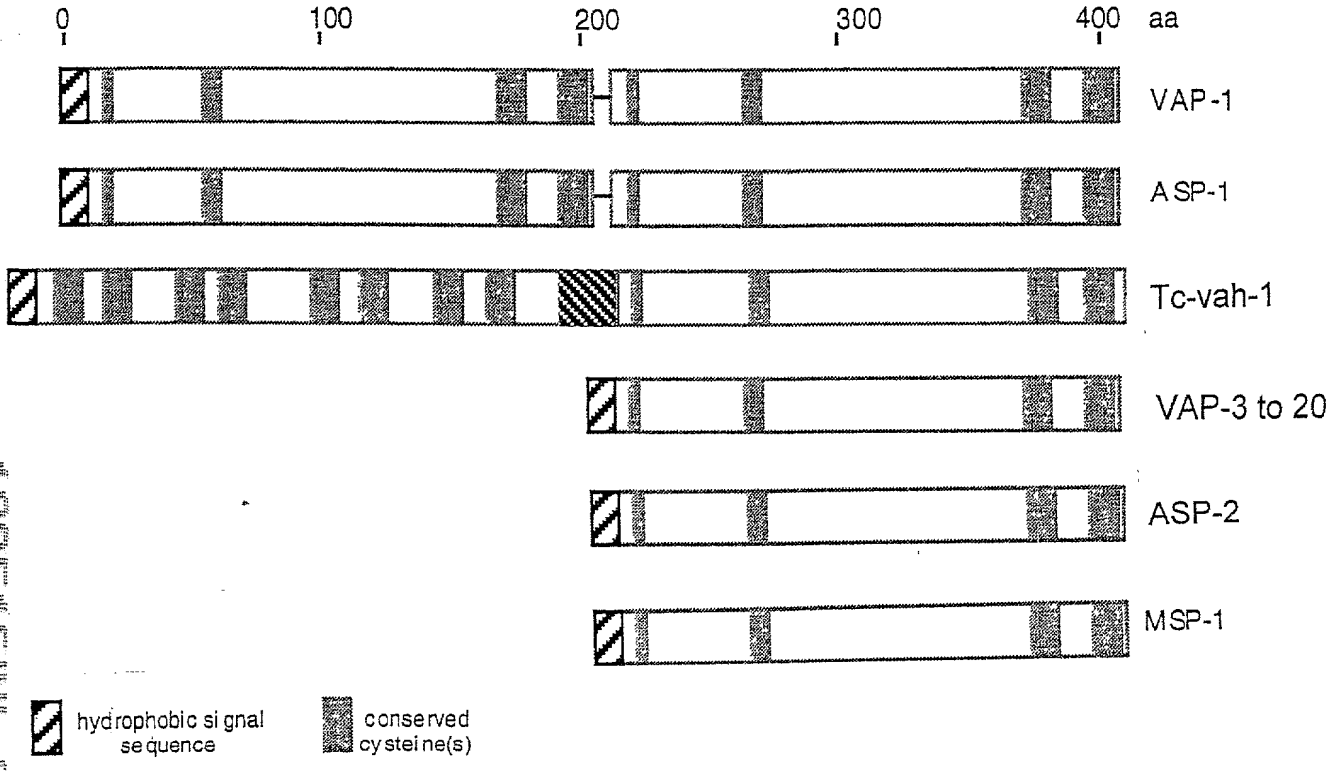


FIGURE 3

CLUSTAL W Alignment of VAP-1, VAP-2, and selected other nematode VA proteins.

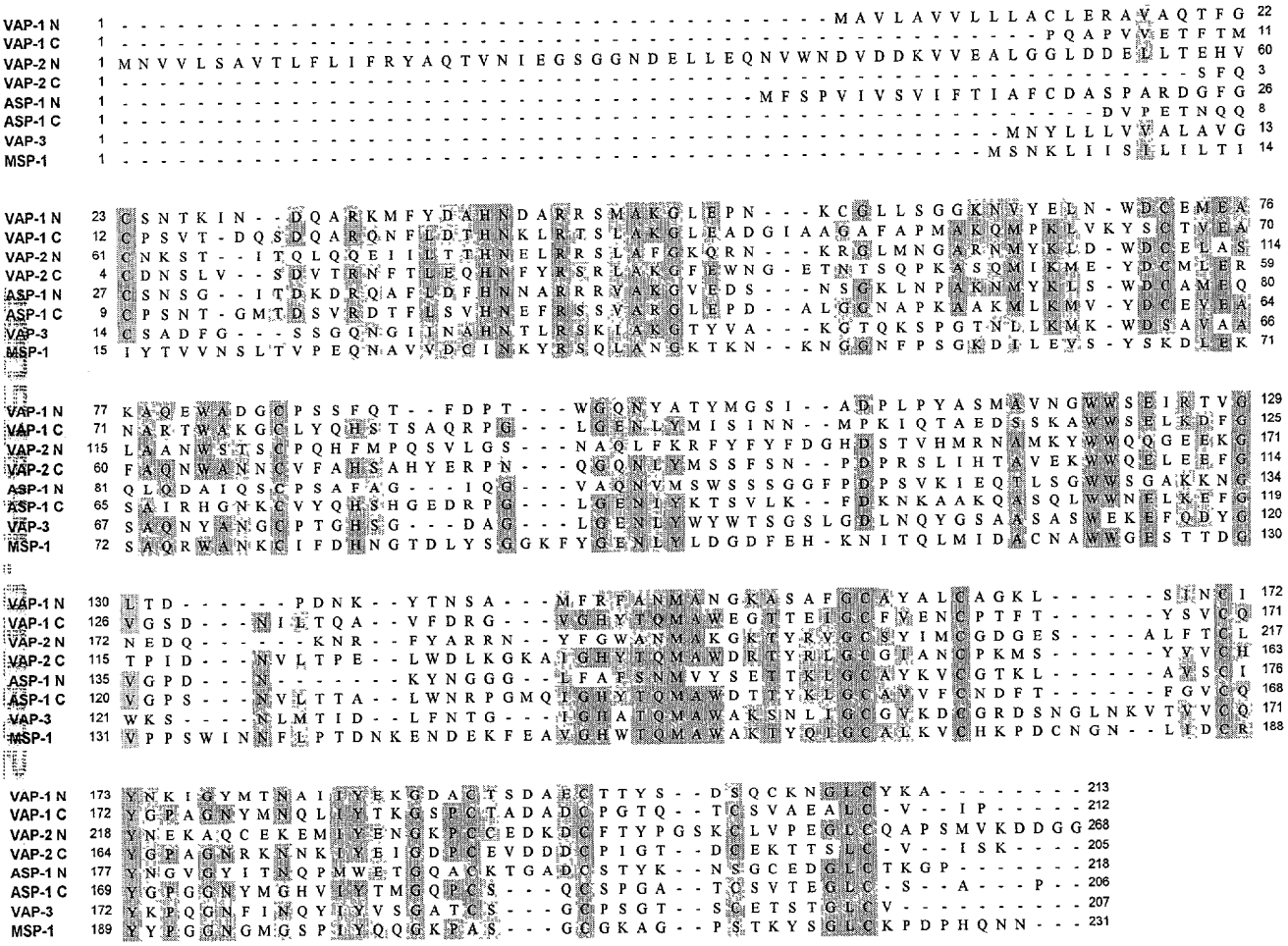
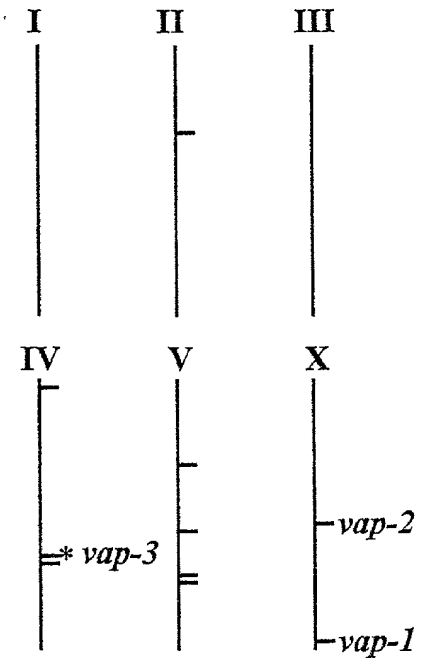


FIGURE 4: Schematic map of selected *C. elegans vap* genes



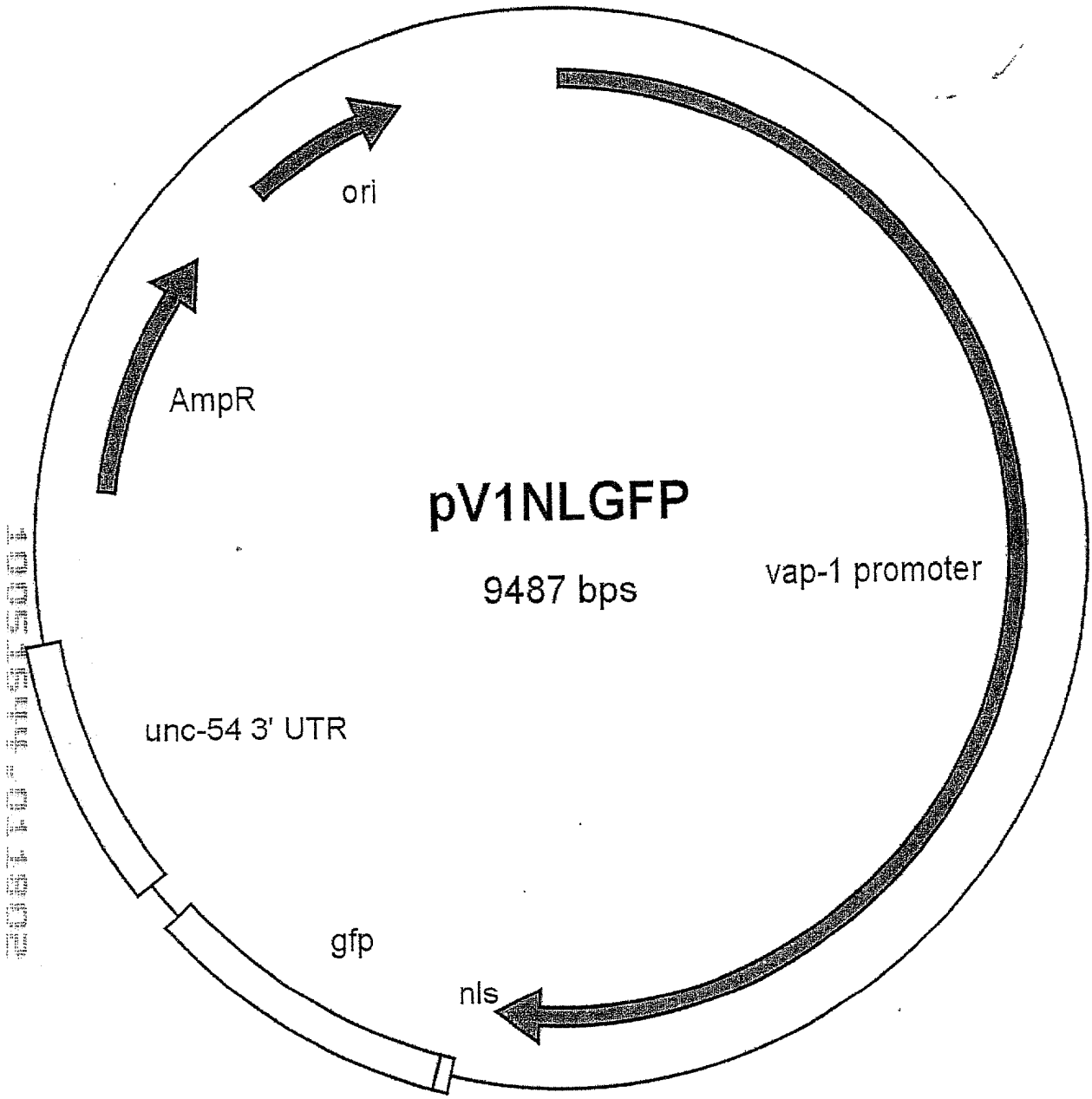


FIGURE 5A

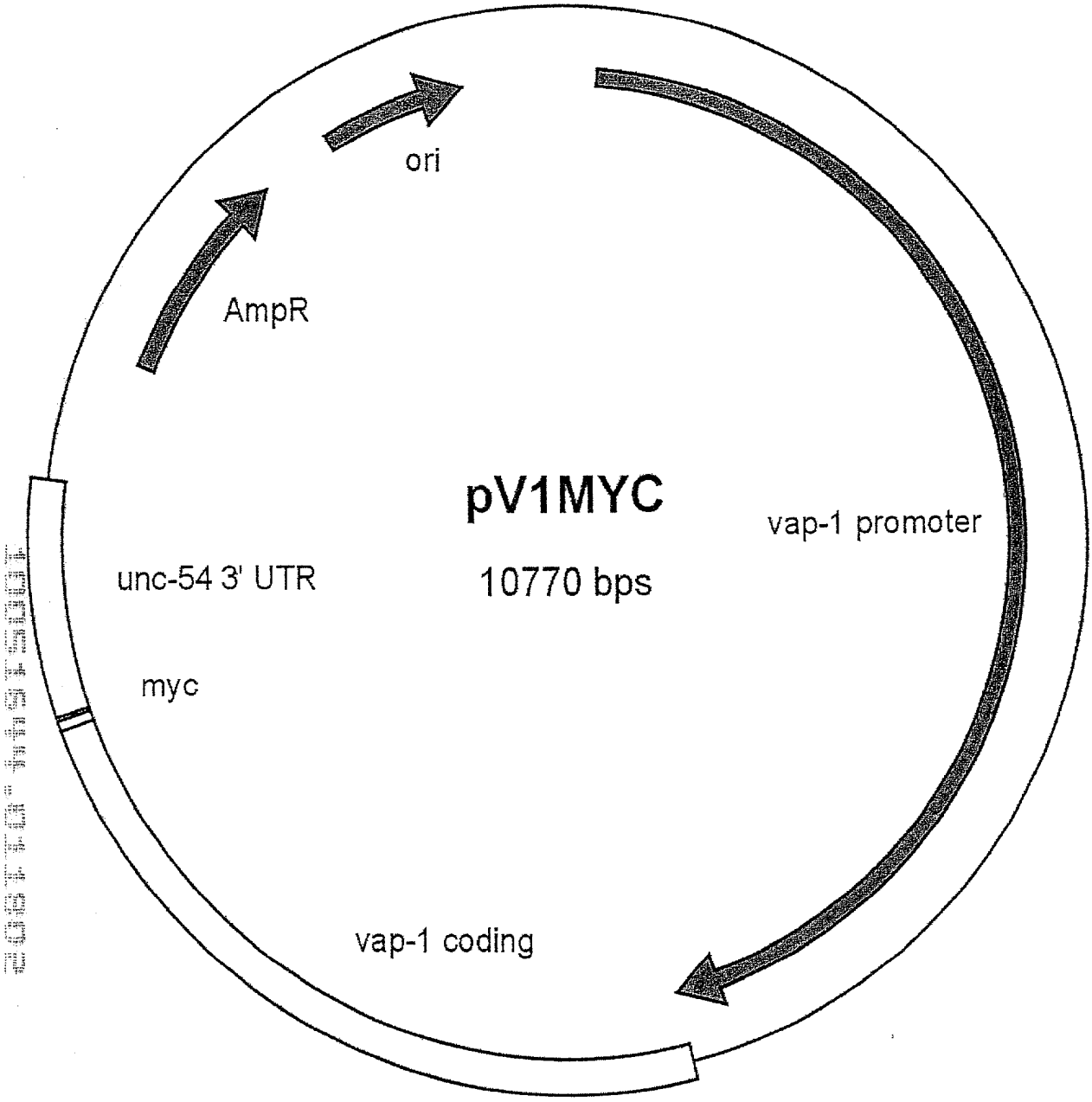

ori
AmpR
pV1MYC
10770 bps
vap-1 promoter
unc-54 3' UTR
myc
vap-1 coding

FIGURE 5B

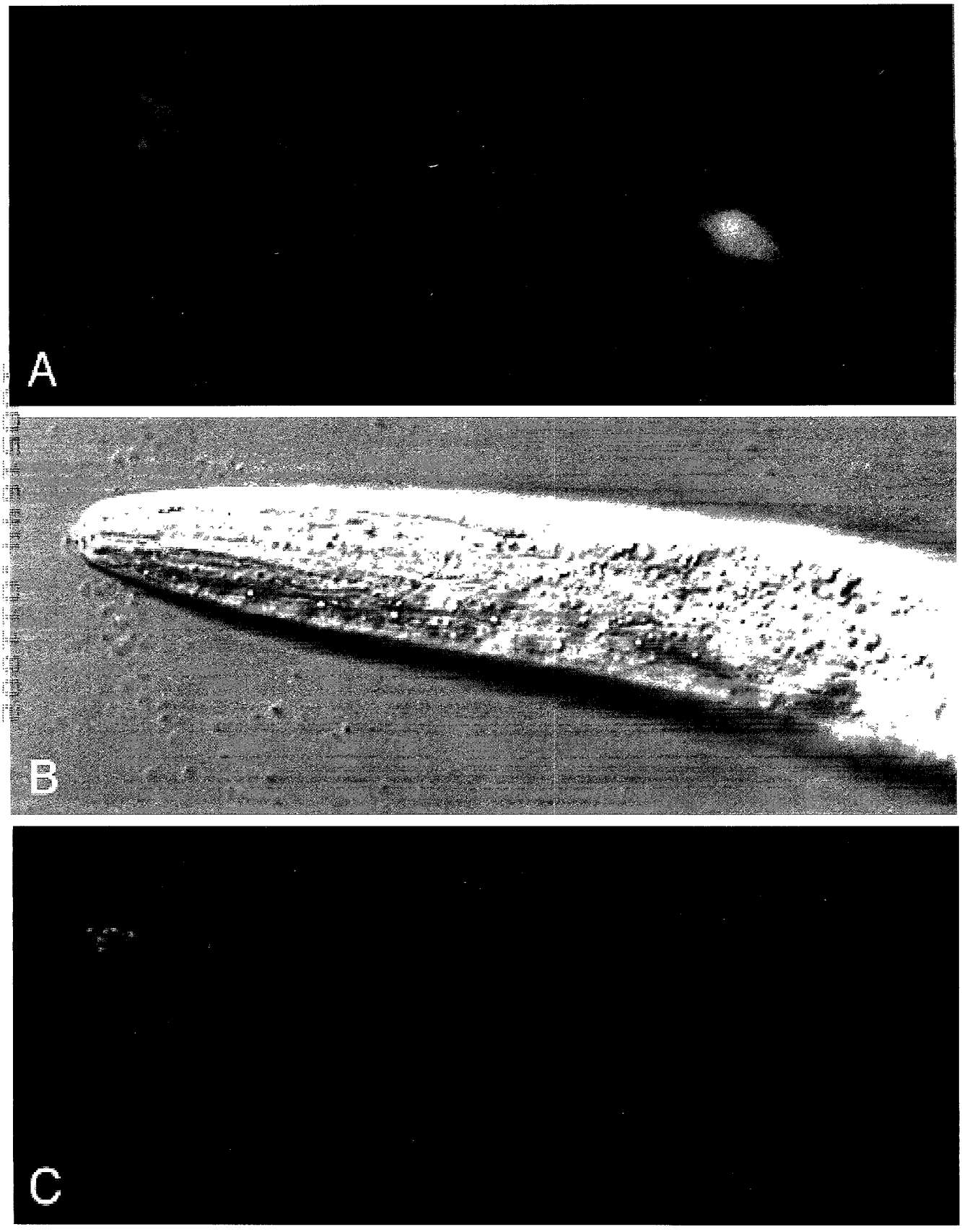


FIGURE 6

FIGURE 7

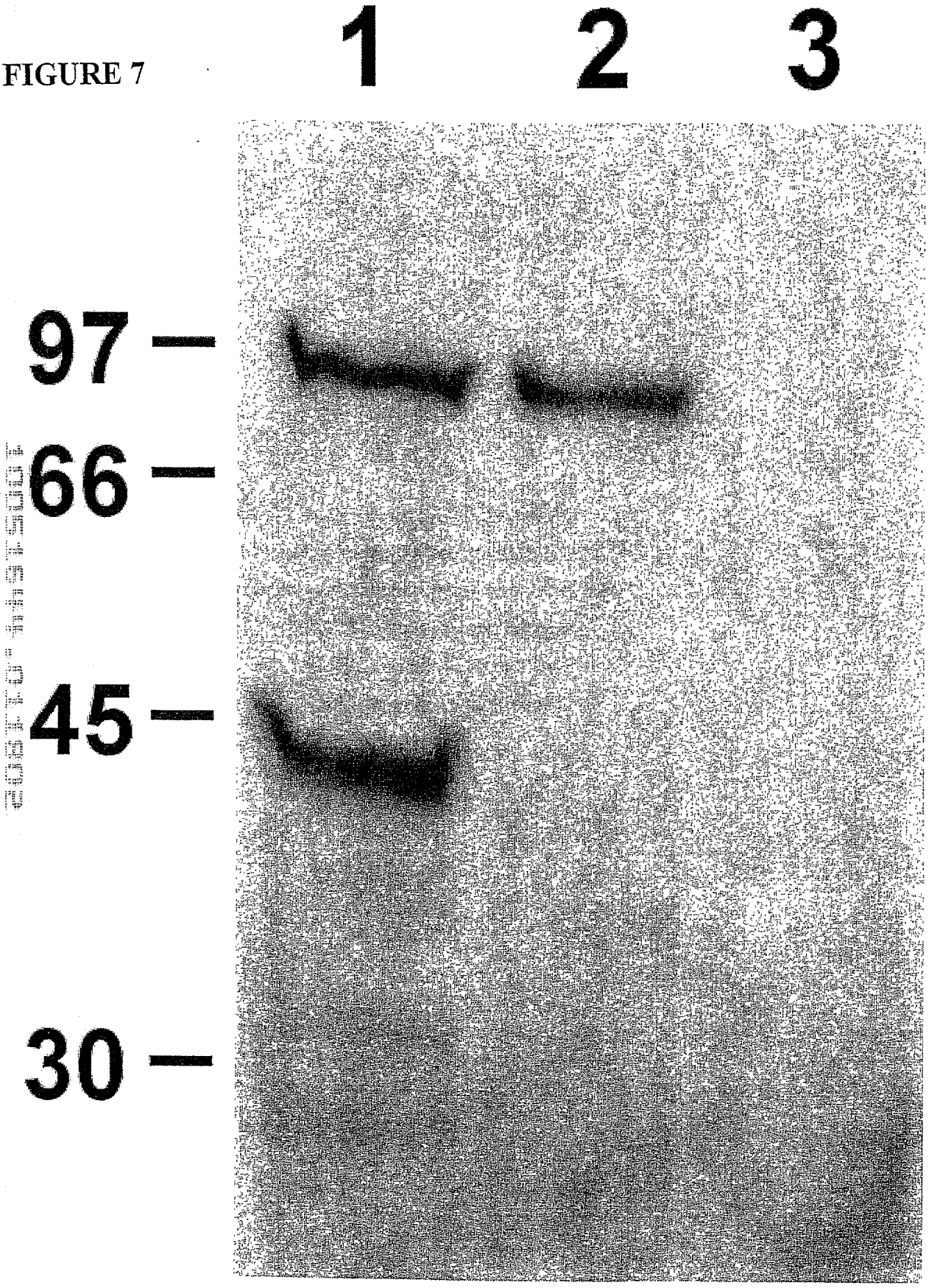
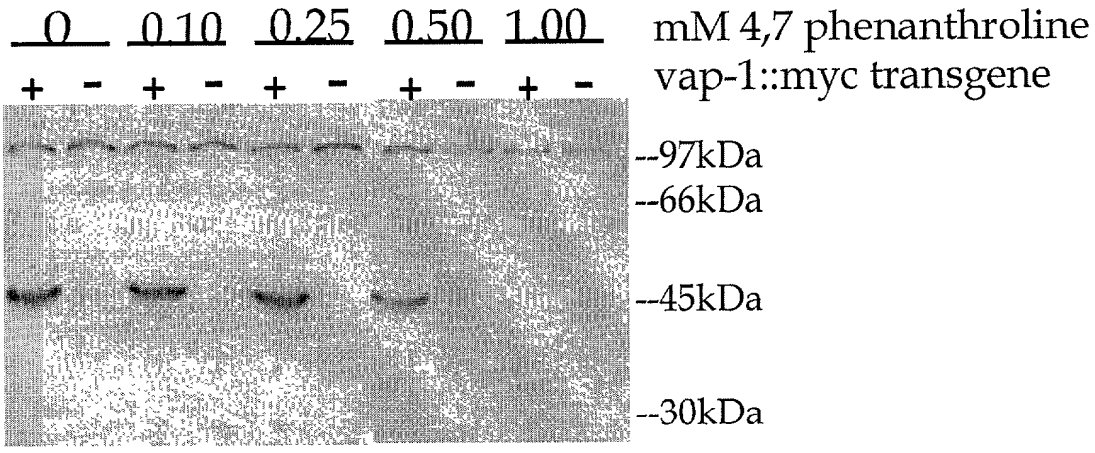


FIGURE 8


0
0.10
0.25
0.50
1.00
mM 4,7 phenanthroline
+ - + - + - + - + -
vap-1::myc transgene
--97kDa
--66kDa
--45kDa
--30kDa